Amendments to the Specification:

Please replace the paragraph beginning at page 7, pre-numbered line 8, with the following amended paragraph:

Figure ~~FIGURE~~ 1 is an overhead, perspective view of a fiber optic communications module constructed in accordance with the principles of the present invention showing a ferrule supporting optical communications fibers interconnected with an optoelectronic subassembly for use in converting optical signals to electrical signals or ~~vice-versa.~~ vice-versa;

Please replace the paragraph beginning at page 7, pre-numbered line 13, with the following amended paragraph:

Figure ~~FIGURE~~ 2 is an overhead, perspective view of the fiber optics communications assembly shown in Figure ~~FIGURE~~ 1 with the ferrule disconnected from the subassembly and the subassembly unplugged from the jack to or from which it transfers electrical ~~signals.~~ signals;

Please replace the paragraph beginning at page 7, pre-numbered line 17, with the following amended paragraph:

Figure ~~FIGURE~~ 3 is a front view of the ferrule shown in Figures ~~FIGURES~~ 1-2, showing, among other things, the optical fiber ends and alignment ~~holes.~~ holes;

Please replace the paragraph beginning at page 7, pre-numbered line 19, with the following amended paragraph:

Figure ~~FIGURE~~ 4 is a front view of the optoelectronic subassembly shown in Figures ~~FIGURES~~ 1-2 showing, among other things, the lens and alignment frame including the lens array and the guide ~~pins.~~ pins;

Please replace the paragraph beginning at page 7, pre-numbered line 22, with the following amended paragraph:

Figure ~~FIGURE~~ 5 is a side view of the fiber optic communications module shown in Figure ~~FIGURE~~ 1 illustrating, among other things, the position of the carrier assembly within the subassembly and how the optoelectronic subassembly may be pluggably connected to a jack mounted on a printed circuit board of a communications system or the ~~like.~~ like;

Please replace the paragraph beginning at page 7, pre-numbered line 27, with the following amended paragraph:

Figure ~~FIGURES~~ 6 is an exploded, overhead perspective view of the subassembly of the present invention showing, among other things, how the casing structure, receptacle, lens and alignment frame, carrier frame section, circuit board, edge connector and the other components of the optoelectronic subassembly relate to one ~~another.~~ another;

Please replace the paragraph beginning at page 8, pre-numbered line 3, with the following amended paragraph:

Figure ~~FIGURES~~ 7 is an enlarged exploded, overhead perspective view of the front portion of the subassembly of the present invention showing, among other things, how the casing structure, receptacle, lens and alignment frame, and carrier frame section relate to one ~~another.~~ another;

Please replace the paragraph beginning at page 8, pre-numbered line 7, with the following amended paragraph:

Figure ~~FIGURE~~ 8 is a perspective view of the lens and alignment frame component of the present invention showing, among other things, the tower structure and the lens array and guide pins which are built into the tower ~~structure.~~ structure;

Please replace the paragraph beginning at page 8, pre-numbered line 10, with the following amended paragraph:

Figure ~~FIGURE~~ 9 is a vertical cross sectional view of the lens and alignment frame of the present invention taken along section line ~~lines~~ 9-9 of Figure ~~FIGURE~~ 8 showing again, among other things, the arrangement of the tower structure, lens array and guide ~~pins.~~ pins;

Please replace the paragraph beginning at page 8, pre-numbered line 13, with the following amended paragraph:

Figure ~~FIGURE~~ 10 is a vertical sectional view of the carrier frame section, lens and alignment frame, receptacle (inner end) and ferrule (proximal end) in assembled form showing, among other things, the vertical alignment of the ferrule with the lens and alignment frame and the carrier frame section and the alignment of the lens array with the optoelectronic ~~device.~~ device;

Please replace the paragraph beginning at page 8, pre-numbered line 18, with the following amended paragraph:

Figure ~~FIGURE~~ 11 is a lateral sectional view of the carrier frame section, lens and alignment frame, receptacle (inner end) and ferrule (proximal end) in assembled form showing,

among other things, the lateral alignment of the ferrule with the lens and alignment frame and the carrier frame section and the alignment of the optical fibers with the lens array and the optoelectronic ~~device.~~ device;

Please replace the paragraph beginning at page 8, pre-numbered line 23, with the following amended paragraph:

Figure ~~FIGURE~~ 12 is an enlarged vertical sectional view around section line ~~lines~~ 12-12 of Figure ~~FIGURE~~ 10 illustrating the upper portions of the carrier frame section and lens and alignment frame in assembled form showing, among other things, the lens elements making up the lenses in the lens array and the alignment of the tower of the lens and alignment frame with the window in the back wall of the receptacle and the alignment of the lens elements with the optoelectronic ~~device.~~ device; and

Please replace the paragraph beginning at page 9, pre-numbered line 1, with the following amended paragraph:

Figure ~~FIGURES~~ 13 is a plan view of the lens array and lens elements comprising the lenses of the lens array which is part of the lens and alignment frame showing the vertically elongated shaping of these lens elements and their deployment with respect to each other.

Please replace the paragraph beginning at page 10, pre-numbered line 12, with the following amended paragraph:

Referring now to Figures ~~FIGURES~~ 1 and 2, a fiber optic connector assembly 10 is shown as comprising an optical ferrule 12 of the type sometimes referred to in the industry as an MT ferrule installed on the end of a cable 14 carrying multiple fiber optic communication elements 17 (not shown in Figures ~~FIGURES~~ 1-2) and an optoelectronic subassembly 16 which

operates as a transceiver module for either transmitting light (photonic) signals or receiving light signals and converting these signals to or from electrical signals. The subassembly 16 includes a small printed circuit board (PCB) 18 having an edge connector 20 with connection pads 25 on both sides which can be readily plugged into and out of an electrical connection jack 22 (in phantom) mounted on a circuit board 24 (in phantom) of a computer or communications system to or from which data can then be relayed over the cable 14 through the subassembly 16. The ferrule 12 and subassembly 16 are adapted for interconnection when the proximal end 26 of the ferrule 12 is inserted and latched within a cavity 28 in the subassembly 16. The ferrule 12 and subassembly 16 are then positioned and aligned so that optical signals can be transmitted either to or from the ferrule 12 and from or to the subassembly 16 for enabling data flow between the cable ~~16~~ 14 and printed circuit board 24 (in phantom).

Please replace the paragraph beginning at page 12, pre-numbered line 10, with the following amended paragraph:

Referring now to Figures ~~FIGURES~~ 6 and 7, the subassembly 10 includes the receptacle 35, metal casing structure 45, lens and alignment frame 44, carrier assembly 50, heat sink 54 and casing structure 47. As previously explained the receptacle 35 is adapted for receiving the ferrule 12 in the cavity 28. The receptacle is mounted in the recess 29 in the casing structure 45 so that it abuts the back wall 51 of the recess 29. The carrier assembly 50 includes the printed circuit board 18, the flex circuit 60 and the carrier frame section 52. The lens and alignment frame 44 is mounted in between the frame section 52 of the carrier assembly 50 and the back wall 51 of the casing structure 45 so that it is immediately adjacent to the fiber ends 32 on the proximal end 26 of the ferrule 12 when the ferrule is latched into the subassembly 16.

The flex circuit 60 connects the frame section 52 to the circuit board 18 serving as a medium for providing a large number of connection lines between components on the carrier frame section 52 and the circuit board 18 including the microcontroller chip 23 and the edge connector 20. The circuit board 18 fits along the back shelf 53 of the casing structure 45 underneath the heat sink 54. The front end 59 of the heat sink 54 abuts the backside of the carrier frame section 52 for dissipating heat generated during operation by the electrical components mounted onto the frame section 52. Except for the heat sink, the metal cover 47 first around the subassembly 16 providing a covering and protection for the receptacle 35, casing structure 45 and the components of the carrier assembly 50 including the circuit board 18 extending along the back shelf 53 of the casing structure 45. The bolts 58 help retain the heat sink 54 and circuit board 18 in position. ~~A shown more clearly in FIGURE 7, the casing structure 45 includes a window 37 in its back wall 51. The lens and alignment frame 44 includes a mostly planar base 56 and a rectangular tower structure 43 projecting forward of the base 56 on which the guide pins 34 and the lens array 48 are mounted. The tower 43 of the lens and alignment frame 44 fits through the window 37 of the casing structure 45 in the assembled device. The lens and alignment frame 44 is one-piece precision plastic injection-molded part including the tower 53, guide pins 34 and lens array 48. The frame section 52 of the carrier assembly 50 preferably includes one or more layers of printed circuit board material including a layer of flex circuit material 61 which is an extended part of the flex circuit 60. The optoelectronic device 40 is precisely mounted on the frame section 52 and includes the photoactive semiconductor components 36 which are deployed on and as part of an integrated circuit (IC) chip that comprises an optoelectronic device 40. The photoactive components 36 may be either semiconductor transmitter elements or semiconductor~~

~~receiver elements and are disposed in a linear array 38 at regular 250 microm intervals corresponding to the linear array 48 of the lenses and the linear array 33 of fibers. When the lens and alignment frame 44 is mounted on the frame section 52 the optoelectronic device 40 and photoactive components 36 are precisely aligned with the lens array 48 and the guide pins 34. If the photoactive elements 36 are intended to be transmitter elements (a transmitter subassembly) they may, for example, be light emitting diodes (LEDs) or laser diodes. They are preferably vertical cavity surface emitting lasers (VCSELs). If the photoactive elements 36 are intended to be receivers elements (a receiver subassembly) they may, for example, be PIN photodiodes or avalanche photodiodes (APDs) although they are preferably PIN photodiodes. One or more signal processing chips 41 may be mounted on the frame section 52 for communicating with the optoelectronic device 40 and more particularly providing drive signals to transmitter elements or providing signal amplification and conditioning in the case of receiver elements.~~

Please add the following new paragraph after the paragraph displayed above:

A shown more clearly in Figure 7, the casing structure 45 includes a window 37 in its back wall 51. The lens and alignment frame 44 includes a mostly planar base 56 and a rectangular tower structure 43 projecting forward of the base 56 on which the guide pins 34 and the lens array 48 are mounted. The tower 43 of the lens and alignment frame 44 fits through the window 37 of the casing structure 45 in the assembled device. The lens and alignment frame 44 is a one-piece precision plastic injection-molded part including the tower 43, guide pins 34 and lens array 48. The frame section 52 of the carrier assembly 50 preferably includes one or more layers of printed circuit board material including a layer of flex circuit material 61 which is an extended part of the flex circuit 60. The optoelectronic device 40 is precisely mounted on the

frame section 52 and includes the photoactive semiconductor components 36 which are deployed on and as part of an integrated circuit (IC) chip that comprises an optoelectronic device 40. The photoactive components 36 may be either semiconductor transmitter elements or semiconductor receiver elements and are disposed in a linear array 38 at regular 250 micron intervals corresponding to the linear array 48 of the lenses and the linear array 33 of the fibers. When the lens and alignment frame 44 is mounted on the frame section 52 the optoelectronic device 40 and photoactive components 36 are precisely aligned with the lens array 48 and the guide pins 34. If the photoactive elements 36 are intended to be transmitter elements (a transmitter subassembly) they may, for example, be light emitting diodes (LEDs) or laser diodes. They are preferably vertical cavity surface-emitting lasers (VCSELs). If the photoactive elements 36 are intended to be receivers elements (a receiver subassembly) they may, for example, be PIN photodiodes or avalanche photodiodes (APDs) although they are preferably PIN photodiodes. One or more signal processing chips 41 may be mounted on the frame section 52 for communicating with the optoelectronic device 40 and more particularly providing drive signals to transmitter elements or providing signal amplification and conditioning in the case of receiver elements.

Please replace the paragraph beginning at page 14, pre-numbered line 5, with the following amended paragraph:

Referring now to Figures 8 and 9, the lens and alignment frame 44 includes a main body or base 56 and a tower 43. The base 56 is mostly planar and includes cavities 57 into which adhesive materials can flow during mounting and a large but shallow recess 55 for accommodating components and wiring on the front side of the carrier frame section 52 on

which the lens and alignment frame 44 is mounted. The tower 43 resides on the front side of the frame section 52 and projects well forward of the base 56. The tower 43 includes a pair of turret-like elevated end sections 49 on top of which the guide pins 34 are mounted so as to project outward and forward from the base 56 and lens array 48. The lenses 46 in the array 48 are deployed at regular 250 micron intervals along a line extending between the elevated end sections 49 and guide pins 34 in a manner corresponding to the arrangement of the photoactive components 36 of the optoelectronic device 40 and fibers 17 of the ferrule 12. The lenses ~~36~~ 46 are precisely aligned with the guide pins 34. Each lens 46 in the array 48 includes a front lens element 46a and a rear lens element 46b for directing light to and from the fiber ends 32 and photoactive components 36, respectively. As shown in Figures 4 and 13, the lens array 48 includes twelve lenses 46.

Please replace the paragraph beginning at page 17, pre-numbered line 1, with the following amended paragraph:

The lens elements 46a (fiber side) have a focal length D of about 450 microns and the lens elements 46b (device side) have a focal length D of about 300 microns with the fibers 17 and optoelectronic device 40 then being positioned at or near the focal points of these lens elements. However, the fibers 17 may be preferably positioned away from the focal points by about 100-200 microns toward the lens element 46a. This may allow ~~the~~ for some of the light emitted in transmitter subassemblies at higher off-axis angles by transmitter components 36 such as VCSELs which is subject to slower modulation patterns to be focused (or rather defocused) away from the fiber ends 32 of the fibers 17. The optimal amount of defocusing depends on the numerical aperture values of the VCSELs and the fibers.